

frequency synthesizer

17. (Currently Amended) The ~~system~~^{*frequency synthesizer*} circuit of claim 16, wherein the logic is configured to execute a binary search algorithm.

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18. (Currently Amended) The ~~system~~^{*frequency synthesizer*} circuit of claim 17, wherein the frequency control circuit is configured to change the controllable oscillator to the operational state corresponding to the distinct frequency that best approximates the predefined frequency.

*frequency synthesizer**wherein the controllable oscillator comprises*

19. (Currently Amended) The ~~system~~^{*frequency synthesizer*} circuit of claim 18, ~~further comprising a~~^{*wherein the controllable oscillator comprises*} plurality of parallel capacitors communicatively coupled to the frequency control circuit, wherein the plurality of parallel capacitors are configured in a predetermined manner.

20. (Previously presented) A system for controlling the frequency of an output signal of a controllable oscillator, the controllable oscillator having a plurality of operational states, each of the plurality of operational states defining a distinct frequency for the output signal of the controllable oscillator, the system comprising:

means for receiving information associated with a predefined frequency;

means for determining a current frequency of the output signal of the controllable oscillator, the current frequency corresponding to a current operational state;

means for comparing the predefined frequency to the current frequency; and

means for selecting, based on the comparing the predefined frequency to the current frequency, one of two next operational states, the selected next operational state having a distinct frequency which better approximates the predefined frequency.